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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/067,424	02/07/2002	Jeng Ping Lu	7447.0021-01	8498

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EXAMINER

BROCK II, PAUL E

ART UNIT

PAPER NUMBER

2815

DATE MAILED: 05/14/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/067,424

Applicant(s)

LU ET AL.

Examiner

Paul E Brock II

Art Unit

2815

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 14 April 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 7-15 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 7-15 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 7 – 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over the applicant's admitted prior art (AAPA) in view of Chan et al. (USPAT 5627094, Chan) and Possin et al. (USPAT 5777355, Possin).

With regard to claim 7, the AAPA discloses in figure 2 a method for making a high fill factor image array (40). The AAPA discloses in figure 2 providing a plurality of source-drain metal contacts (44). The AAPA discloses in figure 2 depositing a first passivation layer (56). The AAPA discloses in figure 2 opening a plurality of via holes through the first passivation layer. The AAPA does not disclose a second passivation layer. Chan discloses in figure 2a depositing a second passivation layer (22) that suppresses lateral leakage current. Chan discloses in figure 2b opening a plurality of via holes through the first and second passivation layers. It would have been obvious to one of ordinary skill in the art at the time of the present invention to use the second passivation layer deposition and opening steps of Chan in the method of the AAPA in order to protect the first passivation layer against contamination thus preventing electrical shorting in underlying devices. It should be noted that the limitation of "that suppresses lateral leakage current" is an intended use recitation that bears to patentable weight in

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a method claim. The AAPA discloses in figure 2 depositing a layer of conductive material. The AAPA discloses in figure 2 depositing a first doped a-Si layer (48). The AAPA discloses in figure 2 patterning to form the collection electrodes (46). The AAPA discloses in figure 2 depositing a continuous layer of I a-Si (50). The AAPA discloses in figure 2 depositing a continuous second layer of doped a-Si (52). The AAPA discloses in figure 2 depositing an upper conductive layer (54). It is not clear if the AAPA and Chan teach patterning the upper conductive layer. Possin teaches in figures 1 and 2; and in the abstract depositing and patterning an upper conductive layer (28). It would have been obvious to one of ordinary skill in the art at the time of the present invention to use the patterning step of Possin in the method of the AAPA and Chan in order to differentiate the device into a plurality of devices, thus creating an array, which results in cost savings over having to make a plurality of devices separately.

With regard to claim 11, the AAPA discloses in figure 2 a high fill factor image array (40) forming process. The AAPA discloses in figure 2 providing a plurality of source-drain metal contacts (44). The AAPA discloses in figure 2 depositing a first passivation layer (56). The AAPA discloses in figure 2 opening a plurality of via holes through the first passivation layer. The AAPA does not disclose a second passivation layer. Chan discloses in figure 2a depositing a second passivation layer (22) over a first passivation layer (20) that suppresses lateral leakage current. Chan discloses in figure 2b opening a plurality of via holes through the first and second passivation layers. It would have been obvious to one of ordinary skill in the art at the time of the present invention to use the second passivation layer deposition and opening steps of Chan in the method of the AAPA in order to protect the first passivation layer against contamination thus preventing electrical shorting in underlying devices. It should be noted that

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the limitation of “that suppresses lateral leakage current” is an intended use recitation that bears to patentable weight in a method claim. The AAPA discloses in figure 2 depositing a layer of conductive material. The AAPA discloses in figure 2 depositing a first doped a-Si layer (48). The AAPA discloses in figure 2 patterning to form the collection electrodes (46). The AAPA discloses in figure 2 depositing a continuous layer of I a-Si (50). The AAPA discloses in figure 2 depositing a continuous second layer of doped a-Si (52). The AAPA discloses in figure 2 depositing an upper conductive layer (54). It is not clear if the AAPA and Chan teach patterning the upper conductive layer. Possin teaches in figures 1 and 2; and in the abstract depositing and patterning an upper conductive layer (28). It would have been obvious to one of ordinary skill in the art at the time of the present invention to use the patterning step of Possin in the method of the AAPA and Chan in order to differentiate the device into a plurality of devices, thus creating an array, which results in cost savings over having to make a plurality of devices separately.

With regard to claims 8 and 12, the AAPA discloses in figure 2 wherein the first passivation layer comprises silicon oxynitride.

With regard to claims 9 and 13, Chan discloses in column 7, lines 60 – 67 wherein the second passivation layer is an oxide.

With regard to claims 10 and 14, Chan discloses in column 8, lines 1 – 14 wherein the second passivation layer has a thickness of about 1000 Å.

With regard to claim 15, Chan discloses in figure 2a wherein the thickness of the second passivation layer is less than the thickness of the first passivation layer.

***Response to Arguments***

3. Applicant's arguments filed April 17, 2003 have been fully considered but they are not persuasive.

4. With regard to the applicant's arguments stating Chan "fails to disclose or suggest a second passivation layer to suppress lateral leakage current," it should be noted that suppressing lateral leakage current is an intended use limitation. In other words, the second passivation layer is intended to be used for suppressing lateral leakage current. Intended use recitations do not define patentable subject matter in a method of making claim. Therefore the applicant's arguments are not persuasive, and the rejection is proper.

5. In response to applicant's argument that "a second passivation layer... suppresses lateral leakage current," a recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. In a claim drawn to a process of making, the intended use must result in a manipulative difference as compared to the prior art. See *In re Casey*, 152 USPQ 235 (CCPA 1967) and *In re Otto*, 136 USPQ 458, 459 (CCPA 1963). In this case no manipulative difference results from the intended use of the second passivation layer as compared with the AAPA and Chan. Therefore the applicant's arguments are not persuasive, and the rejection is proper.

6. In response to applicant's argument that Chan is nonanalogous art, it has been held that a prior art reference must either be in the field of applicant's endeavor or, if not, then be reasonably pertinent to the particular problem with which the applicant was concerned, in order to be relied upon as a basis for rejection of the claimed invention. See *In re Oetiker*, 977 F.2d 1443, 24 USPQ2d 1443 (Fed. Cir. 1992). In this case, Chan is clearly in the field of manufacturing semiconductor devices as is the AAPA. Therefore the applicant's arguments are not persuasive, and the rejection is proper.

### ***Conclusion***

7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.



Any inquiry concerning this communication or earlier communications from the examiner should be directed to Paul E Brock II whose telephone number is (703)308-6236. The examiner can normally be reached on 8:30 AM-5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Eddie Lee can be reached on (703)308-1690. The fax phone numbers for the organization where this application or proceeding is assigned are (703)308-7722 for regular communications and (703)308-7722 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)308-0956.

Paul E Brock II  
May 12, 2003



**EDDIE LEE**  
**SUPERVISORY PATENT EXAMINER**  
**TECHNOLOGY CENTER 2800**